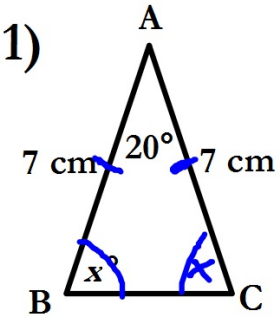
Bell Ringer #24:

Due Today!

Find each measure.

1)



$180 - 20 = 160$

$\frac{160}{2} = 80$

$x° = 80°$

2)

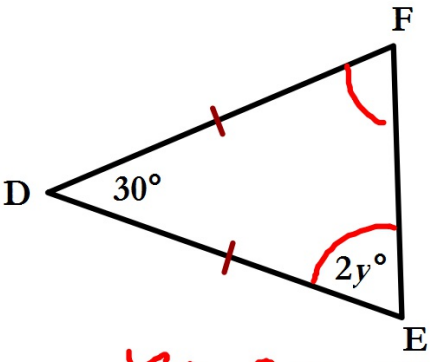
$x + x + 20 = 180$

$2x + 20 = 180$

$-20 \quad -20$

$2x = 160$

$x = 80$



$180 - 30 = 150$

$2y + 2y = 150$

$4y = 150$

$y = 37.5$

Homework Check:

4-6
Skills Practice #1-8

4-6
Practice #1-9

Unit 4: Congruent Triangles

LT14: 4-1 Classifying Triangles
LT15: 4-2 Triangle Angle-Sum
LT16: 4-6 Isosceles & Equilateral
LT17: 4-3 Congruent Triangles
LT18: 4-4, 4-5 Triangle Congruence
LT19: 4-4, 4-5 Triangle Proofs

congruent - having the same measure

congruent triangles - triangles in which all matching parts are congruent

corresponding parts - matching parts of congruent triangles

KeyConcept Definition of Congruent Polygons

Words Two polygons are congruent if and only if their corresponding parts are congruent.

Example

Corresponding Angles

$\angle A \cong \angle H$ $\angle B \cong \angle J$ $\angle C \cong \angle K$

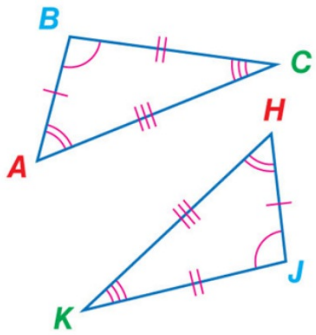
Corresponding Sides

$\overline{AB} \cong \overline{HJ}$ $\overline{BC} \cong \overline{JK}$ $\overline{AC} \cong \overline{HK}$

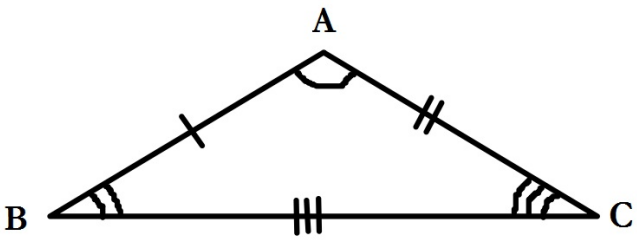
Congruence Statement

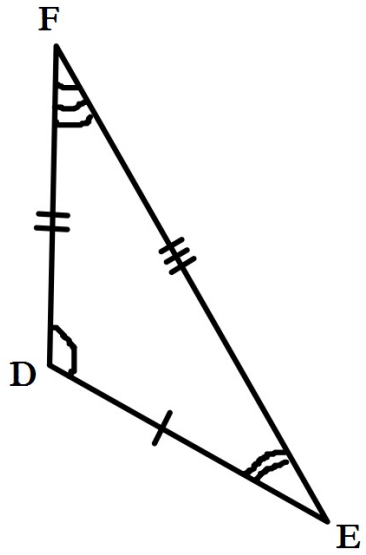
$\triangle ABC \cong \triangle HJK$

Model



A. If these two triangles are congruent then name the name the corresponding parts.





$\angle A \cong \angle D$

$\angle B \cong \angle E$

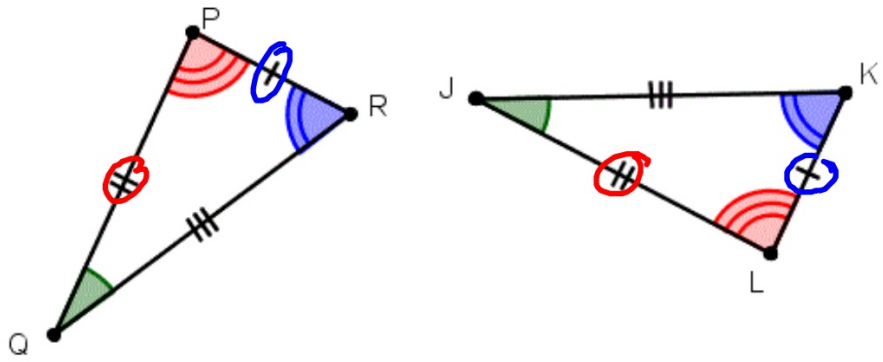
$\angle C \cong \angle F$

$\overline{AB} \cong \overline{DE}$

$\overline{AC} \cong \overline{DF}$

$\overline{BC} \cong \overline{EF}$

B. Error Analysis: Identify which congruence statements are erroneous.



$\angle Q \cong \angle J$

$\angle QPR \cong \angle JLK$

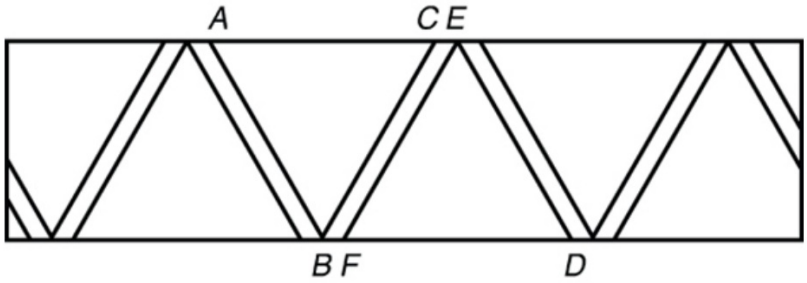
$\angle PQR \cong \angle JKL$ $\cong \angle QRP$

$\overline{PR} \cong \overline{LK}$

$\overline{QR} \cong \overline{JL}$ $\overline{QR} \cong \overline{JK}$

$= \overline{PQ} \cong \overline{LJ}$

C. The support beams on the fence form congruent triangles. In the figure $\Delta ABC \cong \Delta DEF$, which of the following congruence statements correctly identifies corresponding angles or sides?



A. $\angle ABC \cong \angle EFD$

B. $\angle BAC \cong \angle DFE$

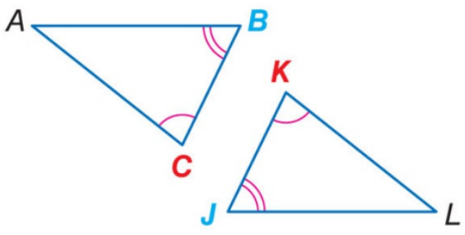
C. $\overline{BC} \cong \overline{DE}$

D. $\overline{AC} \cong \overline{DF}$

Theorem 4.3 Third Angles Theorem

Words: If two angles of one triangle are congruent to two angles of a second triangle, then the third angles of the triangles are congruent.

Example: If $\angle C \cong \angle K$ and $\angle B \cong \angle J$, then $\angle A \cong \angle L$.



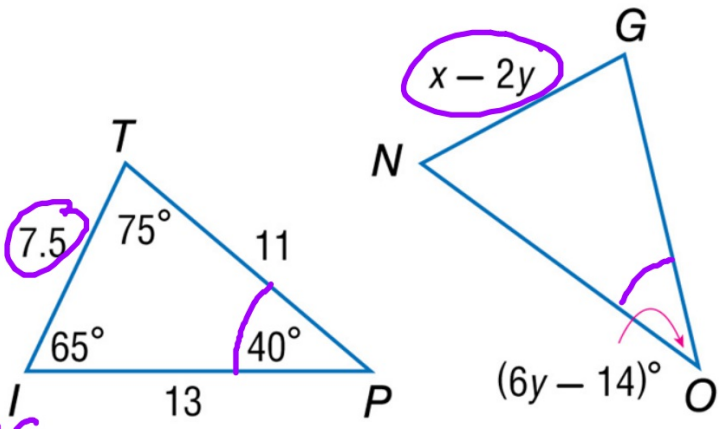
D. In the diagram, $\Delta ITP \cong \Delta NGO$. Find the values of x and y.

$6y - 14 = 40$

$+14 \quad +14$

$6y = 54$

$y = 9$



$x - 2y = 7.5$

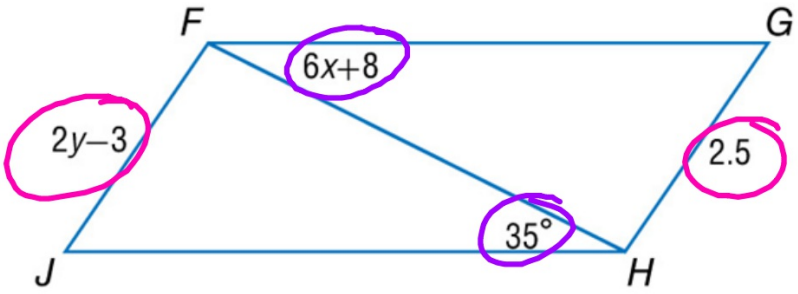
$x - 2(9) = 7.5$

$x - 18 = 7.5$

$+18 \quad +18$

$x = 25.5$

E. In the diagram, $\Delta FHJ \cong \Delta HFG$. Find the values of x and y.



$6x + 8 = 35$

$-8 \quad -8$

$6x = 27$

$x = 4.5$

$2y - 3 = 2.5$

$+3 \quad +3$

$2y = 5.5$

$y = 2.75$

Homework:

4-3
Skills Practice #1-4

4-3
Practice #1-4, 6